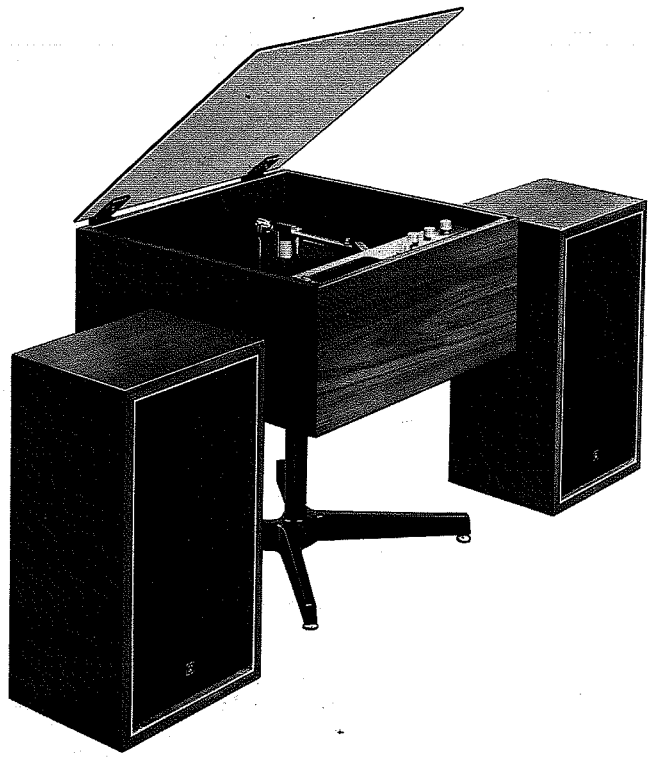
PIONEER

Model **C-6000A**

INSTALLATION AND OPERATING MANUAL
Including CIRCUIT DIAGRAMS and
TROUBLE SHOOTING

(K)



PIONEER

FEATURES

HIGH PERFORMANCE FM FRONT END

The FM front end features a highly sensitive field effect transistor (FET) RF amplifier, assuring an outstanding sensitivity, selectivity and performance stability.

FM MULTIPLEX STEREO RECEPTION

The unit incorporates an FM multiplex time-switching circuit and permits you to enjoy stereo programs with high fidelity sound and excellent channel separation.

EASY-TO-USE AUTOMATIC TURNTABLE

A high precision, easy-to-use new automatic turntable is provided. For operation, no special knowledge on the mechanism is required. Manual operation is also possible by changing the spindle.

WELL-MATCHED LOUDSPEAKER SYSTEMS

With the C-6000A, excellent two-way speaker systems are furnished, which enhance the pleasure of high-fidelity reproduction. A 8" cone type woofer and a 2½" cone type tweeter equipped in a carefully designed closed baffle type enclosure will produce full-range sounds.

NEW PROVISION FOR ADDITIONAL SPEAKER SYSTEMS

The new arrangement for two pairs of speaker terminals provided on the rear panel permits you to install another speaker systems of your own choice in addition to the furnished speaker systems. You can enjoy, for instance, high-fidelity music in two separate rooms.

DELUXE AND STYLISH APPEARANCE OF THE ENCLOSURE

High-quality enclosure of natural walnut finish, plus metal pedestal which supports the unit —— all of these suggest something elegant at all times.

ASSEMBLING OF THE PEDESTAL

The metal pedestal mainly consists of the cabinet support, the shaft, the crossed base and others, which are all rigidly constructed. They are supplied in separate packages. Unpack them carefully and assemble them by following the steps described below.

1. Fit the saddle-shaped metal fitting onto the center of the crossed base in such a way that the guide pin hole in the metal fitting matches to that in the base.

Then, insert the shaft in the center holes of the metal fitting and the base to permit the shaft guide pin to run through the guide pin hole as illustrated in Fig. 1. Fix the shaft tightly to the base with the plain washer, spring washer and hex. nut by the furnished wrench and screwdriver.

2. Fit the cabinet support onto the upper end of the shaft and permit the guide pin on the shaft to run through the guide pin hole in the support. Fit the plain washer, spring washer and nut onto the shaft from the top and secure the support tightly to the shaft by means of the wrench.

MOUNTING OF THE PEDESTAL ON THE CABINET

1. Carefully place the cabinet upside down on a soft mat or rug, holding the dust cover closed by hand.

Note: When placing the cabinet upside down on the floor, be sure to hold the dust cover closed tightly. Loosely holding the dust cover may cause the cover to open itself abruptly with spring force, giving an unfavorable shock to the cabinet.

2. Place the pedestal assembly on the bottom of the cabinet with the cabinet support down so that the four holes provided on the ends of the arms of the cabinet support match to the corressponding tapped holes in the cabinet bottom as illustrated in Fig. 4. In this instance, be sure that the crossed base is positioned as illustrated in Fig. 4.

Secure the pedestal assembly tightly to the cabinet with the plain washer, spring washer and screws provided in the kit by using the furnished screwdriver.

3. Placing of the cabinet

After the pedestal assembly has been completely secured to the cabinet, place the cabinet-pedestal assembly back on the plane surface, carefully holding the dust cover by hand.

If the cabinet-pedestal assembly is seen tilting to either direction, adjust the horizontal level by turning the adjusting screws provided on the back of each arm of the crossed base.

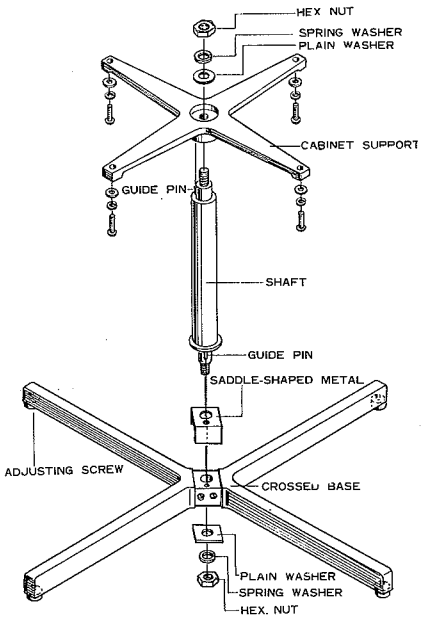


Fig. 1

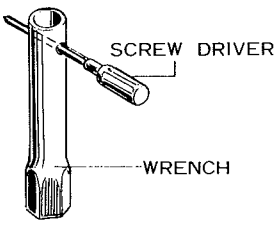


Fig. 2

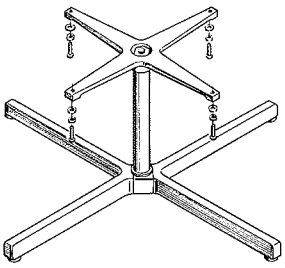


Fig. 3

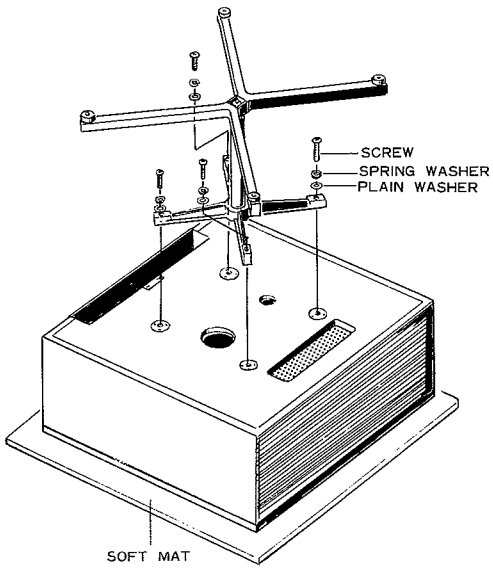


Fig. 4

UNPACKING AND ASSEMBLING OF THE TURNTABLE

The turntable platter is supplied securely fixed to the mounting board to prevent possible damage in transit. Unpack the turntable in the following steps.

1. Raise the edge of the rubber mat at points where white plastic angles are inserted between the turntable platter and the board.
You will see a screw which secures the platter to the board as illustrated in Fig. 5. Remove the screws using the furnished screwdriver and then discard the white angles.
2. Release the arm lock and slightly move the tonearm toward the turntable platter by hand, and then carefully remove the white packing material by pulling it upward as illustrated in Fig. 6.
3. Lock the tonearm to the arm rest and slide the furnished counterweight onto the rear of the tonearm and then give it a few turns in the direction of the arrow mark as illustrated in Fig. 7.

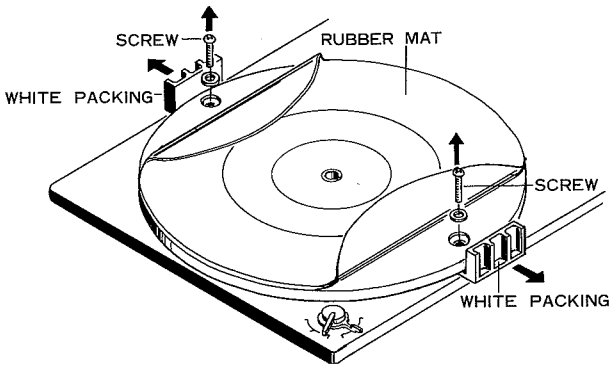


Fig. 5

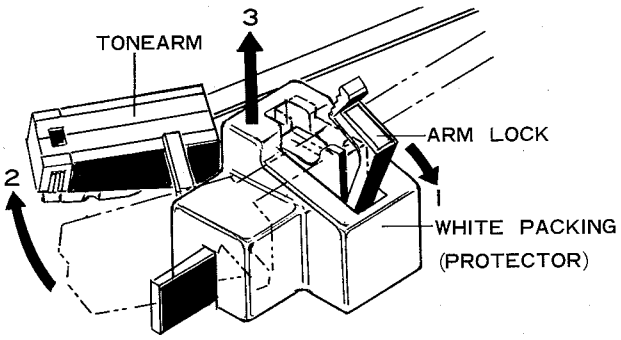


Fig. 6

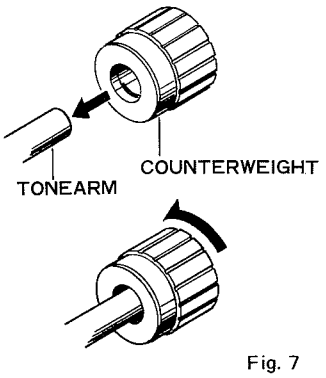


Fig. 7

INSTALLATION

Install your Model C-6000A with the following points in mind.

- The place must be well-ventilated and free from humidity and dust.
- The equipment should not be exposed to the direct sunrays.
- The equipment should not be placed near heaters.
- The equipment should not be installed in a place where there is significant vibration or the floor is not level.

ROOM ACOUSTIC

- After you have installed your Model C-6000A, first listen to music by operating the equipment according to the operating instructions described in this manual, and see how the reproduced music sounds.
- The reproduced sound depends on the size and structure of the room, the arrangement of the furniture, and the materials of the wall, floor and ceiling. Generally, the reproduced sound fills the room if the ceiling is low and the floor is hard or if the depth of the room is relatively small and the wall opposing the speaker systems is hard. Undesirable acoustic conditions of this nature can be eliminated either by laying a carpet on the floor or by covering the wall with a thick drape, depending on the conditions of the room. Rearranging the furniture is also effective for obtaining irregular reflections of the loudspeaker sound.

CONNECTION OF SPEAKER SYSTEMS

- The cords of the speaker systems that come with the C-6000A are provided with plugs.
  Plug the cord of the right channel speaker system to the A SPEAKER OUTPUT terminal (R). Likewise, plug the cord of the left channel speaker system to the A SPEAKER OUTPUT terminal (L).
- Another set of speaker systems can be connected to the C-6000A. When you wish to use another set of speaker systems, connect the cords of the speaker systems to the furnished plugs. Plug the cords from the speaker systems to the speaker output terminals as in the case of the furnished speaker systems. When connecting the cords for the speaker systems to the furnished plugs, be careful not to make a mistake on the polarity (+, —) and the channels (right or left).

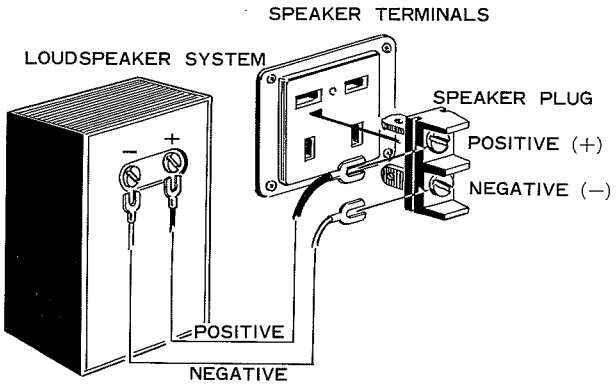


Fig. 8

ANTENNA AND GROUND CONNECTIONS

FM ANTENNA

- If your house is built with wooden materials and is located near the FM station, set up the furnished indoor T-type antenna in the room. The antenna will provide satisfactory reception of FM programs only by adjusting the direction of the horizontal elements. The twin leads from the antenna should be connected with the FM antenna terminals. For the operating procedure of reception of FM broadcast, see "RECEPTION OF FM " on page10 .
- If your house is located far from the FM station or is built with ferroconcrete, installation of an outdoor FM antenna may be required for satisfactory reception of FM programs. Be sure to connect the twin leads from the antenna with the FM antenna terminals.
  Consult an audio equipment shop in your area for the best type of outdoor FM antenna.

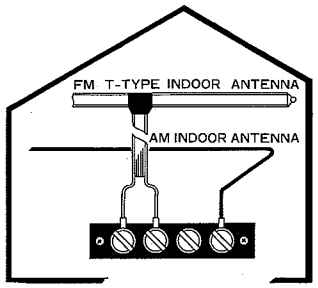


Fig. 9

AM ANTENNA

- Lay the furnished AM antenna wire on the wall or any appropriate structure as high as possible, and connect one end of the wire to the AM antenna terminal. If the indoor antenna wire does not provide satisfactory reception of AM programs, an outdoor antenna should be erected. Be sure to connect one end of the antenna wire with the AM antenna terminal.

GROUNDING

For minimum noise, the use of a proper ground is recommended. This may be either a water pipe or a ground rod. The lead from the ground is connected to the Ground terminal.

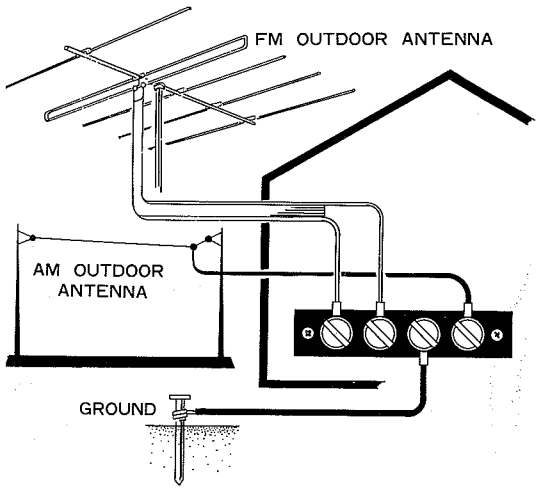
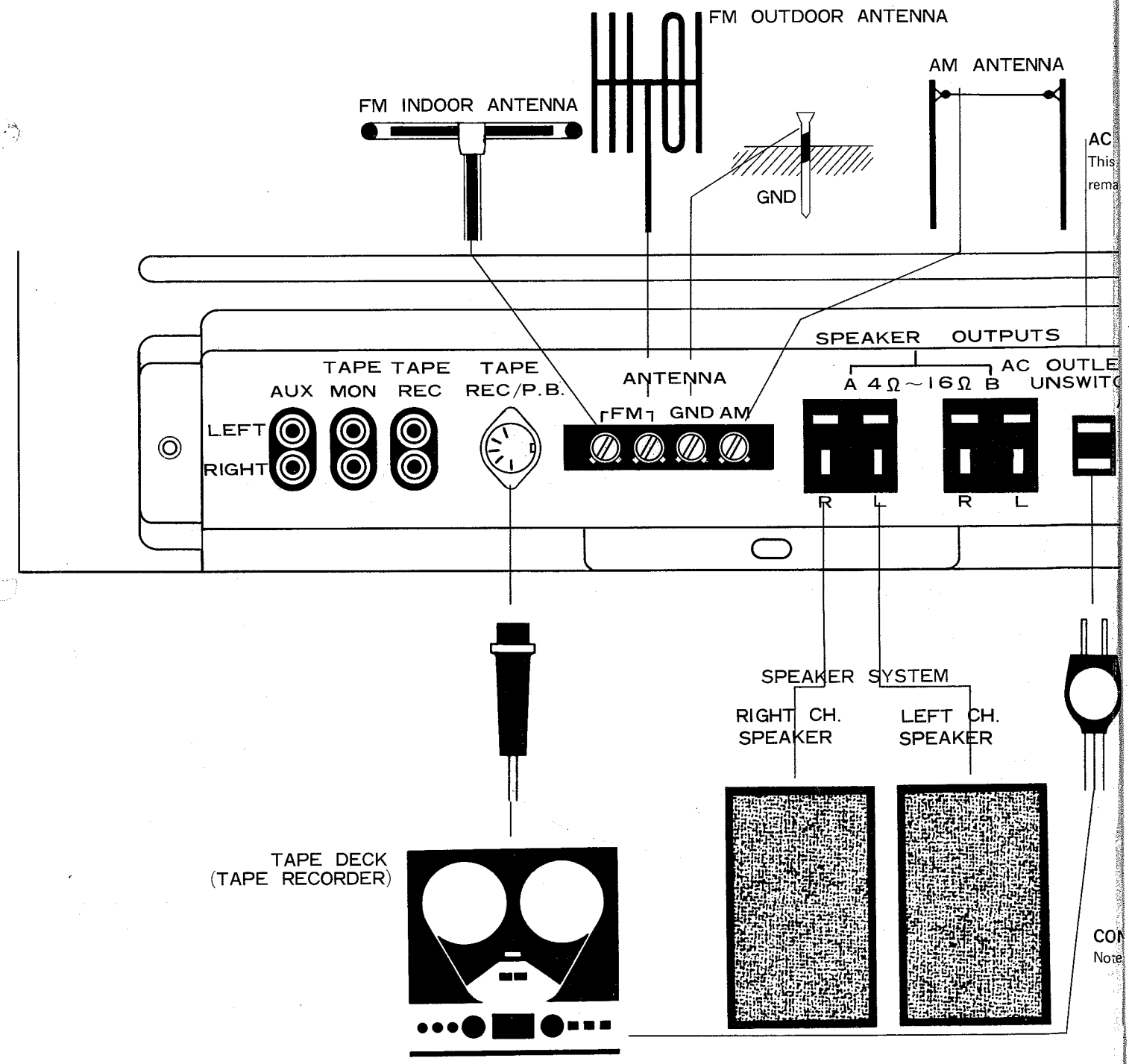


Fig. 10

CONNECTION DIAGRAM



IETAL REAR COVER

hen connecting the antenna wire or the speaker cords, etc. to the rminals on the rear panel, remove the rear cover by loosening the rews on both sides of the cover.
fter the connections are complete, replace the cover and secure it ghtly by screws.

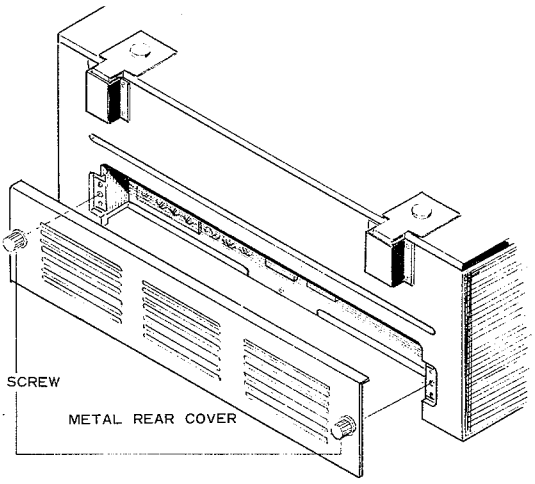
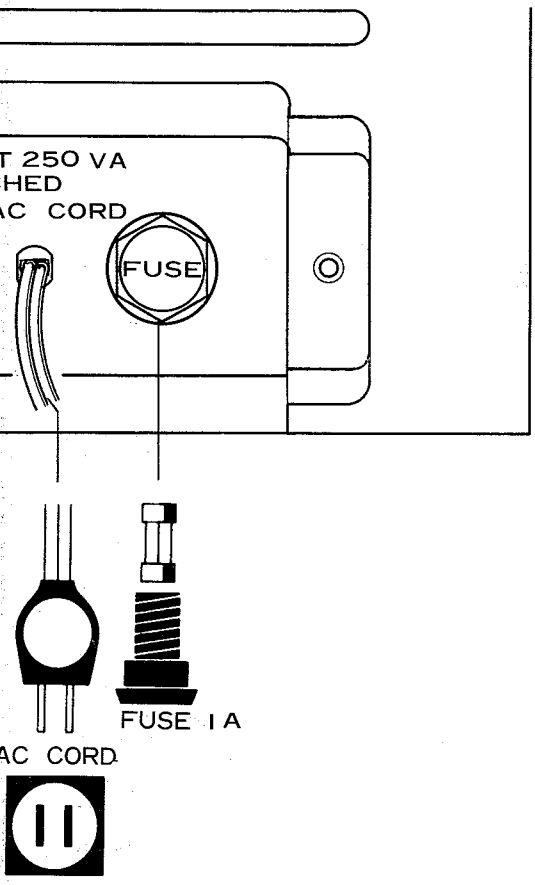


Fig. 11

OUTLET (UNSWITCHED) 250 VA

outlet is not controlled through the POWER SWITCH, and ns live at all times.



NECTION DIAGRAM

When you use two sets of speaker systems, the minimum impedance for each speaker system must be 8 ohms. The impedance, however, may be 4 to 16 ohms when only one speaker system is used.

Fig. 12

CONNECTION OF TAPE DECK (OR TAPE RECORDER)

- The tape deck to be used with the C-6000A must be provided with either an output jack (LINE OUTPUT) for connection to external amplifier or a tape monitor jack.
- The tape deck (or tape recorder) should also be provided with a built-in recording/playback preamplifier.

PIONEER's Tape Deck Model T-500 or T-600 is highly recommended for use with your C-6000A.

CONNECTION FOR RECORDING

Connect the recording input jacks (LINE INPUT) of the tape deck (o tape recorder) to the TAPE REC JACKS of the C-6000A. For this connection, use the cords which are furnished with the tape deck. The upper jack is for the left channel and the lower jack is for the right channel. If the tape deck (or tape recorder) is monophonic, connect the input jack to either upper or lower TAPE REC JACK.

CONNECTION FOR PLAYBACK (OR TAPE RECORDING MONITOR)

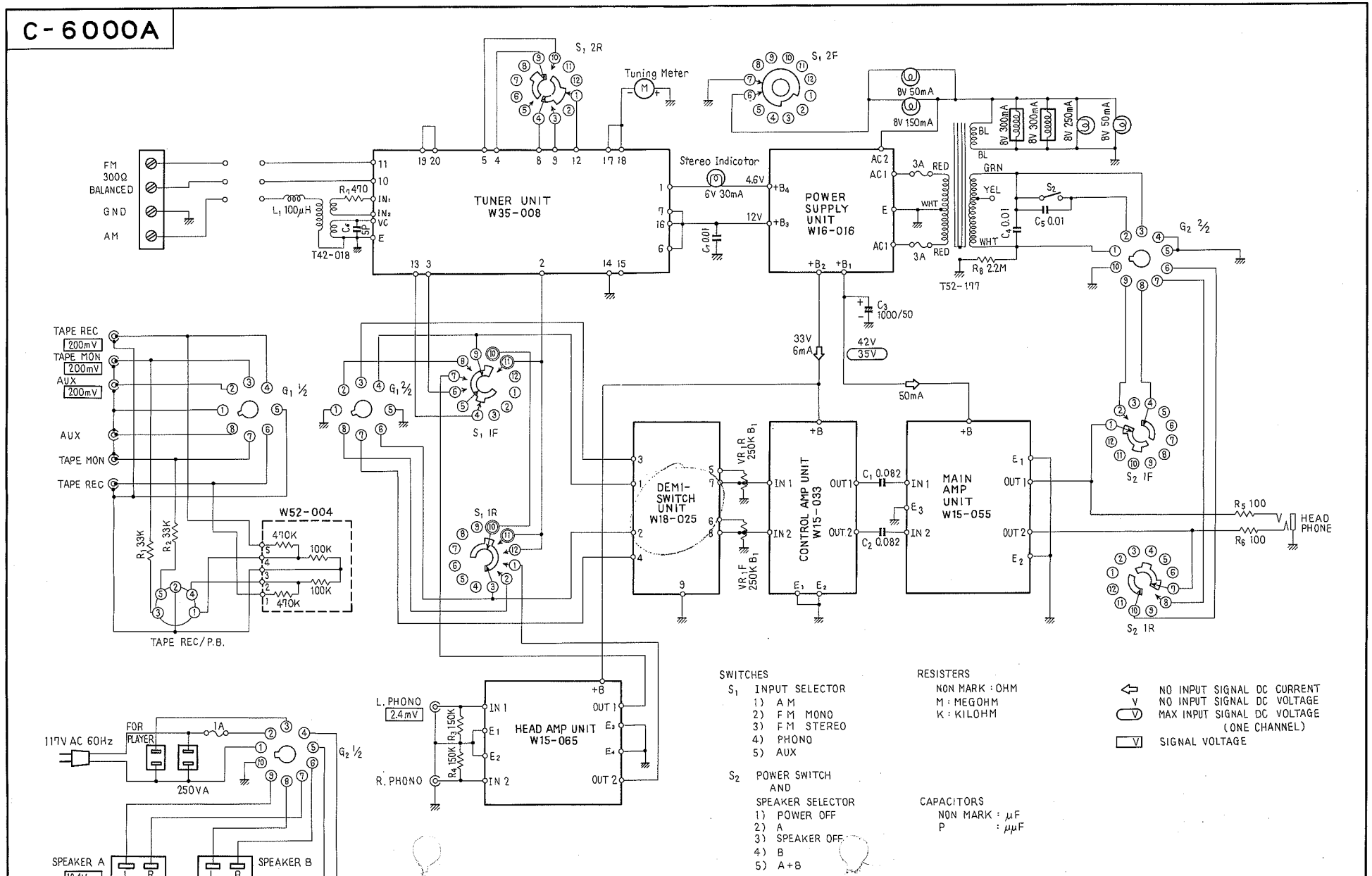
Connect the playback output jacks (LINE OUTPUT or TAPE MONITOR JACKS) of the tape deck (or tape recorder) to the TAPE MONITOR JACK of the C-6000A. The connecting procedure is similar to the "CONNECTION FOR RECORDING"

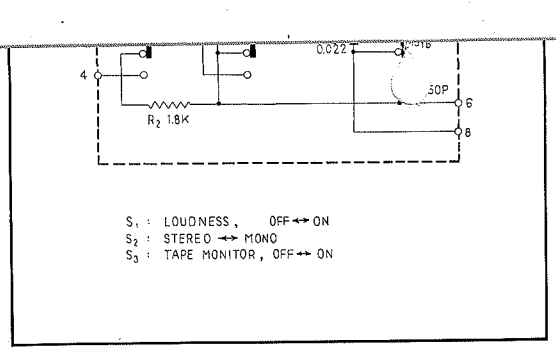
USE OF REC/P.B (DIN TYPE) CONNECTOR

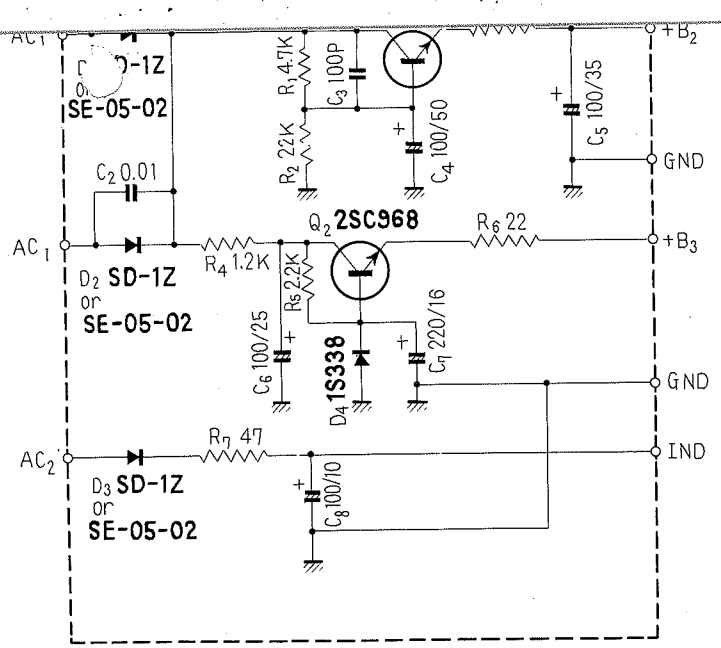
If your tape deck (or tape recorder) is provided with a cord having DIN type connector plug, the tape deck (or tape recorder) can be connected for either recording or playback operations by simply connecting the cord between the tape deck (or tape recorder) and the C-6000A.

In this case, disregard the above described "CONNECTION FOR RECORDING" and "CONNECTION FOR PLAYBACK".

PIONEER Model C-6000A

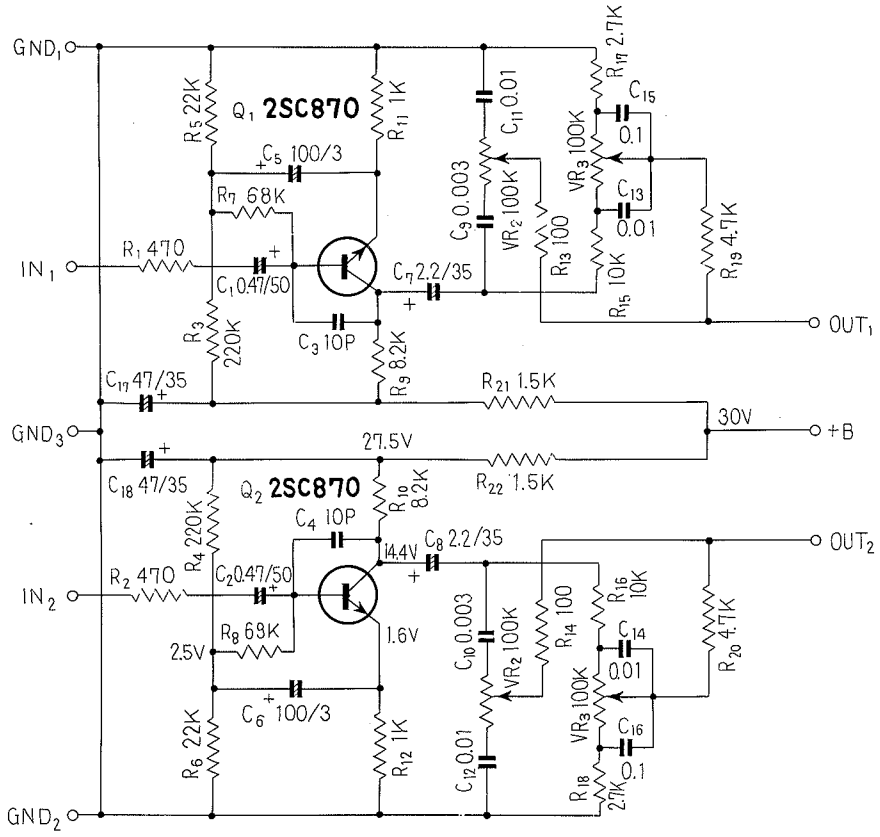






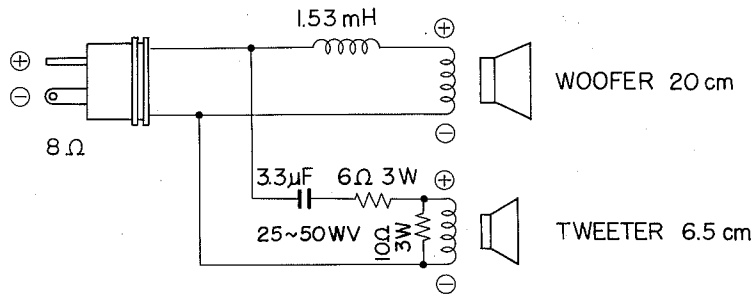
CONTROL AMP UNIT

W15-033

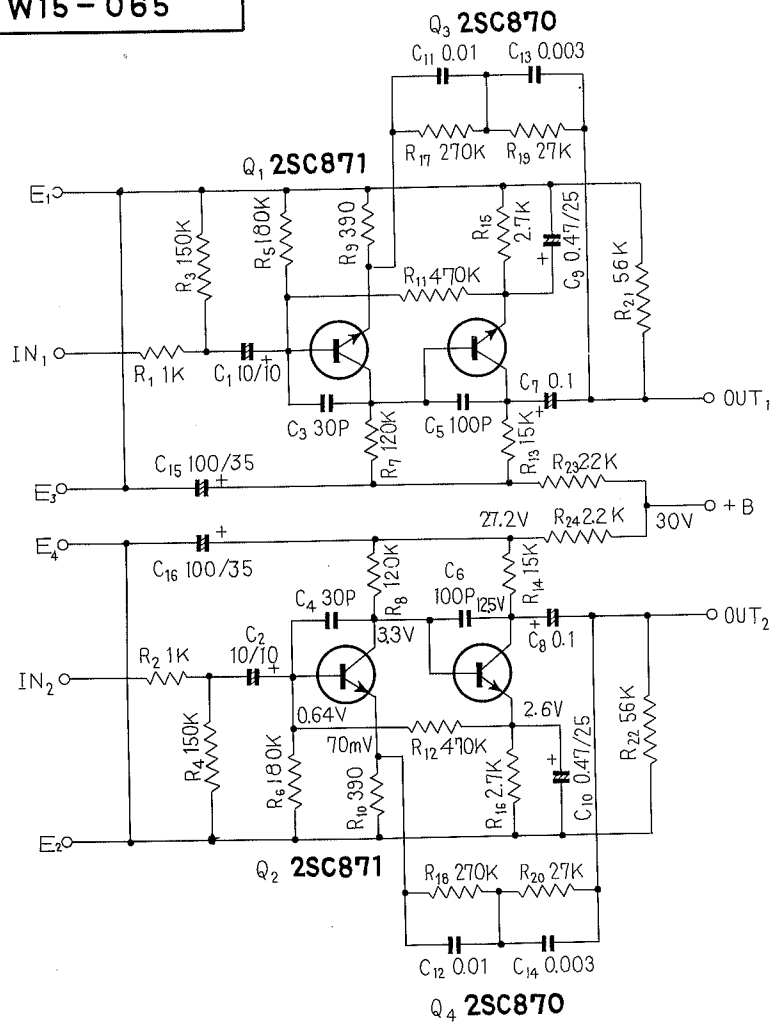


VR2 TREBLE CONTROL
VR3 BASS CONTROL

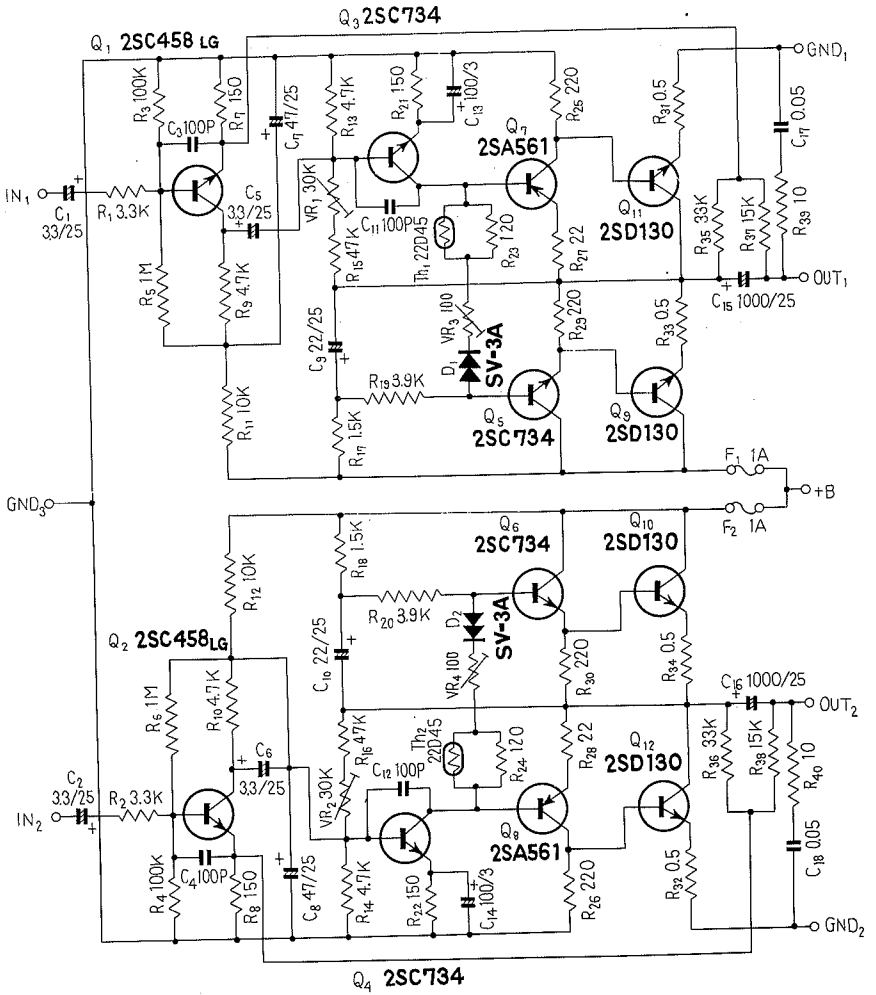
SPEAKER SYSTEM WIRING



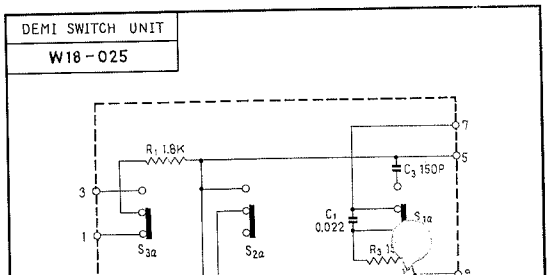
HEAD AMP UNIT
W15-065



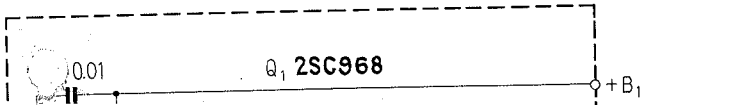
MAIN AMP UNIT
W15-055



DEMI SWITCH UNIT
W18-025

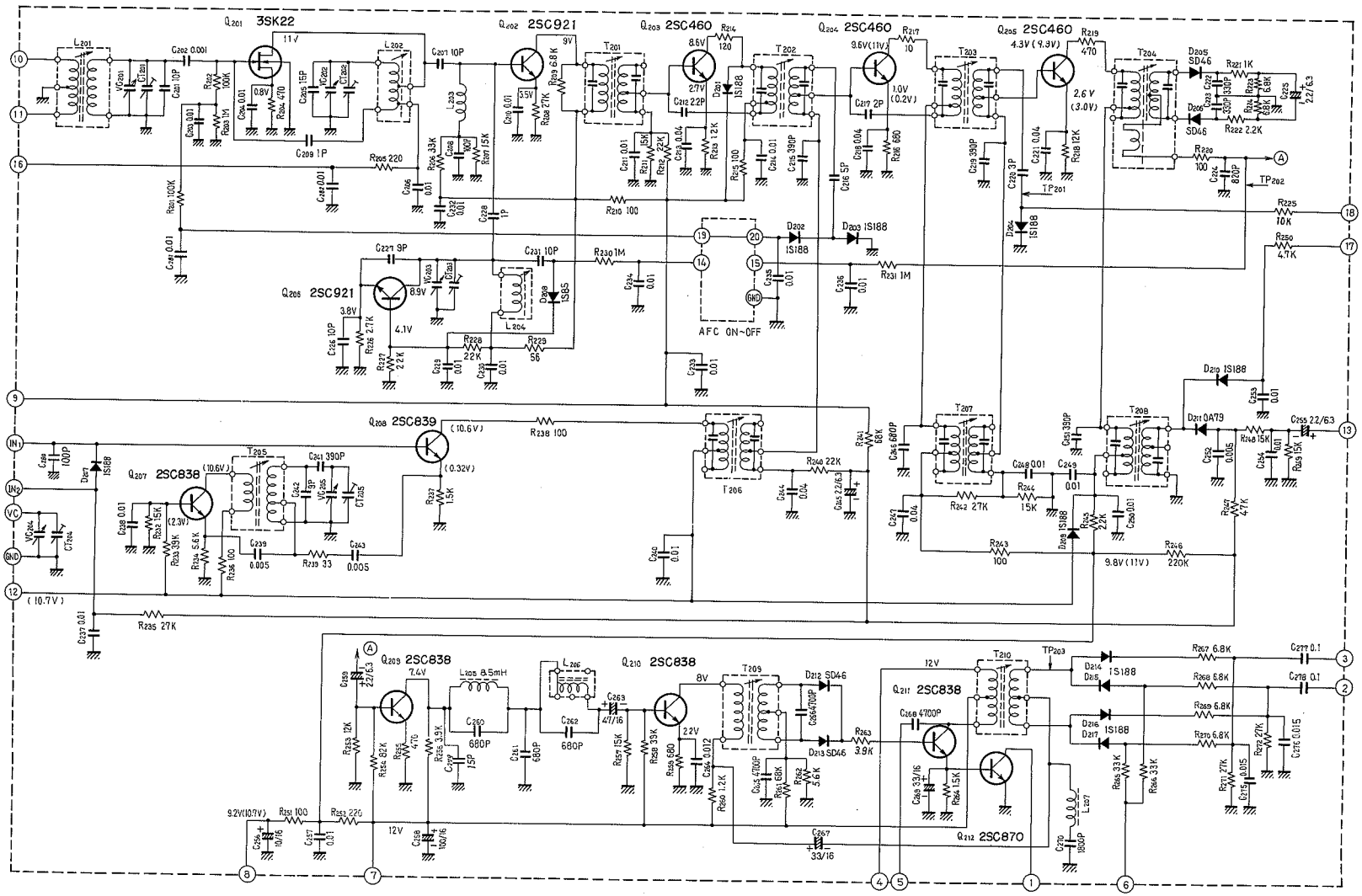


POWER SUPPLY UNIT
W16-016



TUNER UNIT

W35-008



V : DC VOLTAGE (FM)

(V): DC VOLTAGE (AM)

RECEPTION OF FM

1. Set the SELECTOR switch to the FM STEREO position.
2. Tune the C-6000A in to the desired station by turning the TUNING control while observing the deflection of the needle of the TUNING indicator. The station has been properly tuned in when the needle of the TUNING indicator deflects all the way to the right. If the tuned-in station is broadcasting a stereo program, the FM STEREO indicator comes on. With the SELECTOR switch set in this position, monophonic programs can also be received.
3. As soon as the desired station has been tuned in, gently turn the VOLUME control knob clockwise and adjust the BASS control and TREBLE control for the desired tone.

* When your house is located far from the FM station, or external noise is significant, set the SELECTOR switch to the FM MONO position. The noise may be eliminated and reception will become much better. When the SELECTOR switch set in this position, however, stereo programs are received as monophonic programs.
(The FM STEREO indicator keeps lighting in this case).

4. If reception of FM programs is not satisfactory by the above described operating steps 1 to 3, check the antenna by referring to the ANTENNA AND GROUND CONNECTIONS on page 5.

RECEPTION OF AM

1. Set the SELECTOR switch to the AM position.
2. Tune the C-6000A in to the desired station by turning the TUNING control while observing the deflection of the needle of the TUNING indicator. The station has been properly tuned in when the needle of the TUNING indicator deflects all the way to the right.
3. As soon as the desired station has been tuned in, gently turn the VOLUME control knob clockwise and adjust the BASS control and TREBLE control for the desired tone.
4. If reception of AM programs is not satisfactory by the above described operating steps 1 to 3, check the antenna by referring to the ANTENNA AND GROUND CONNECTIONS on page. 5.

● When the C-6000A is installed in a place very close to the station, the sound reproduced through the loudspeakers may get distorted, the field strength being very strong sometimes. If this phenomenon is noticed, shorten or remove the AM antenna wire. The reception may become the best.

THE PROCEDURE FOR DISK RECORD PLAYING IS ON PAGE 11.

RECORDING AND PLAYBACK WITH TAPE DECK (OR TAPE RECORDER)

RECORDING

The signals of the program being reproduced through the loudspeakers always appear at the TAPE REC jacks. Therefore, set the SELECTOR switch and the MODE switch according to the program source you wish to record, by referring to RECEPTION OF BROADCASTS on page 10, and PLAY OF DISK RECORD.
The VOLUME, BASS, and TREBLE controls of the C-6000A do not affect the sounds being recorded. The recording level should be adjusted with the level controls of the tape deck (or tape recorder).
Note: When a monophonic tape deck is used, depress the MODE switch to MONO. Monophonic signal is supplied to the tape deck (or tape recorder).

PLAYBACK

Depress the TAPE MONITOR switch to ON, and then adjust the VOLUME, BASS, and TREBLE controls for the desired volume and tone.

- As long as the TAPE MONITOR switch is locked to ON position, the set position of the SELECTOR switch does not affect the equipment operation.

TAPE MONITOR

When a recording is made by using a 3-head tape deck (or tape recorder), tape monitor can be made as follows:

- Lock the TAPE MONITOR switch to ON for monitoring the "after-recording" signal.
- Keep the TAPE MONITOR switch to OFF for monitoring the "before-recording" signal.

PLAY OF DISK RECORD

1. Set the SELECTOR switch to the PHONO position.
2. Play the records by the Automatic Turntable. Refer to page 13.
3. Adjust the VOLUME, BASS and TREBLE controls as you wish.

OPERATION OF AUTOMATIC TURNTABLE

ADJUSTMENT OF STYLUS PRESSURE

The stylus pressure control is interlocked with the anti-skating control device for complete compensation of the skating force. Before playing records, set these control devices in the following steps.

1. Turn the stylus perssure control (inner knob) and the anti-skating force control (outer knob) counterclockwise by hand, and set the O-mark reading on the outer knob to the red mark on the inner knob as shown in Fig. 14.
2. Remove the stylus guard from the cartridge and release the arm lock
3. Turn the counterweight in either direction by hand to balance the tonearm in a plane parallel to the plane of the turntable platter.
4. Return the tonearm onto the arm rest by hand and lock it.
5. Turn the stylus pressure control (inner knob) clockwise to set its "3" reading to the base line provided on the tonearm supporter, for instance. This means that the stylus pressure has been set at 3 grams. Since the anti-skating control (outer knob) is interlocked with the stylus pressure control, the anti-skating control will automatically be set to "3".

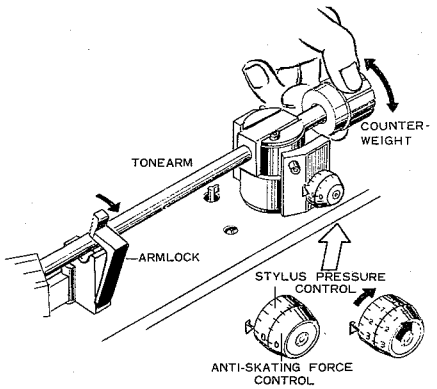


Fig. 14

INSERTING SPINDLE

1. Two kinds of spindles are furnished; the long one is for automatic multiple play; the short one, for manual single play.
2. Each of the spindles has two small projections on a line, one on the upper part and the other on the lower part, and the spindle hole in the center of the turntable platter is provided with a groove to accept the projections. Insert either spindle in the spindle hole, matching the projection on the lower part to the groove as shown in Fig. 15. Rotate the spindle 90 degrees clockwise, depressing it slightly. Then, the spindle will be set properly.
3. When removing the spindle, rotate it 90 degrees counterclockwise and pull it out.

Note: Do not try to change the spindle while the turntable is rotating. Such a practice will become a major cause of trouble to your equipment.

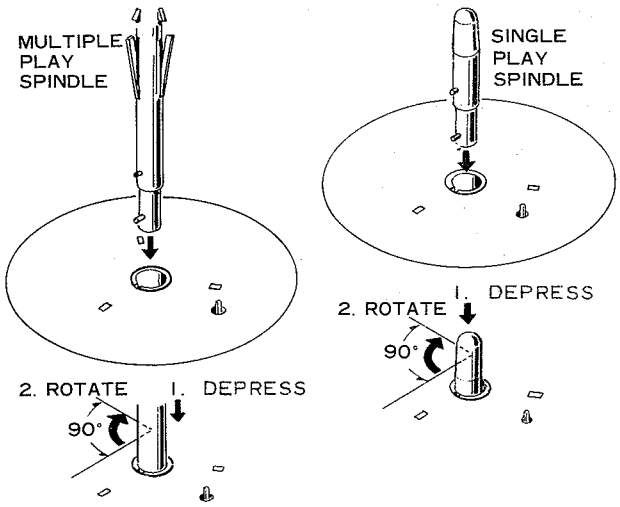


Fig. 15

ADJUSTING TURNTABLE SPEED

Adjust the turntable speed accurately by the following steps.

1. Set the single play spindle.
2. Place a 33-rpm record on the turntable and then place the furnished stroboscope on it as illustrated in Fig. 16.
3. Set the speed selector lever to "33".
4. Move the command control lever to "Start", and the turntable will start rotating.
5. Adjust the fine speed control lever so that the lines for 33-1/3 rpm on the stroboscope will appear to remain stationary.

Note: If the fine speed control lever is moved to the right (to "+" mark) the turntable runs faster, and if it is moved to the left (to "—" mark) the turntable runs slower.

6. When the fine speed adjustment is complete, move the command control lever to "Stop". The turntable will come to a stop.

Note: Do not try to make the above-mentioned fine speed adjustment in the daylight. It is recommended that a fluorescent light be used even in the daytime.

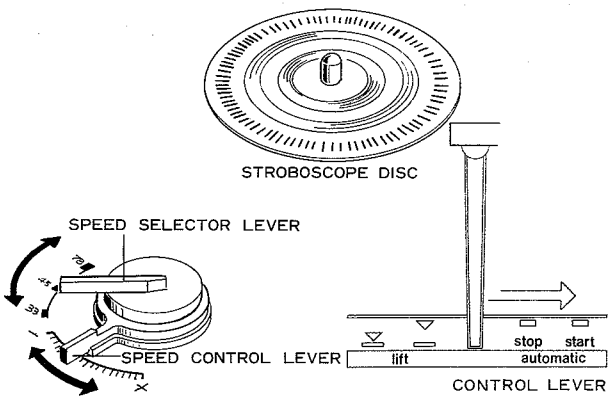


Fig. 16

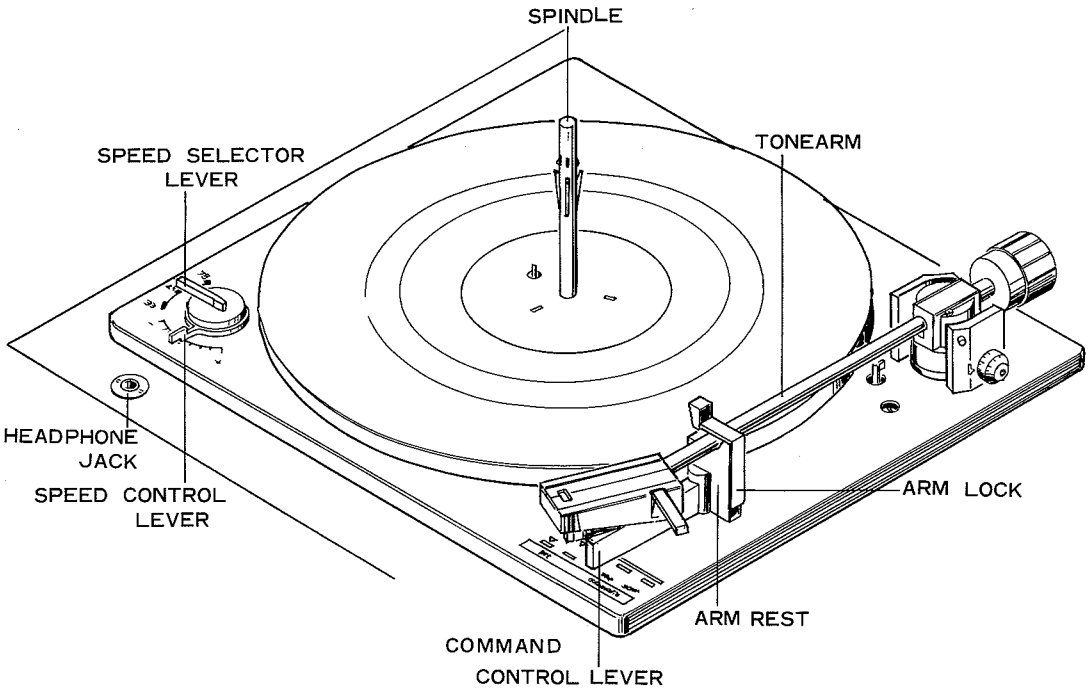


Fig. 17

AUTOMATIC MULTIPLE PLAY

The C-6000A can continuously play one sides of up to 8 records of the same size (33, 45 or 78 rpm).

1. Set the automatic multiple play spindle in the turntable platter.
2. Place the desired number (up to 8) of records of the same size on the spindle.
3. Set the speed selector lever to the rpm of the records to be played (33, 45 or 78 rpm)
4. Release the arm lock by hand.
5. Move the command control lever to "Start".
6. Then, automatic multiple play of records will start; the spindle lets the first record drop on the turntable, the turntable starts rotation. The tonearm raises off the arm rest, moves over the record and then set down on the cuing point of the record. Upon finishing the last record, the tonearm will automatically moves back onto the arm rest, and the turntable stops revolving.
7. Should the stylus point not set down correctly on the cuing point of the record, adjust the lowering position of the tonearm by turning the screw provided in the mounting board using the screwdriver. (The lowering position of the tonearm is adjusted to the record size before shipped.)

Note: When you wish to reject a certain record during a multiple play operation, move the command control lever to "Start" at the very moment the stylus is about to touch that particular record. Then the tonearm will move back onto the arm rest, and the following record will drop for play.

FULLY AUTOMATIC SINGLE PLAY

For fully automatic single play, take the following steps.

1. Set the single play spindle in the turntable platter.
2. Place a record on the turntable platter.
3. Set the speed selector lever to the rpm of the record.
4. Move the command control lever to "Start".

Then, an automatic single play will start. After the record has finished playing, the tonearm will automatically return to the arm rest and the turntable stops revolving.

CONTINUOUS REPEAT

For repeating a single play, take the following steps.
1. Turn the spindle 90 degrees counterclockwise.
2. Move the command control lever to "Start".
3. Then, the play will start and the tonearm at the end of the record will automatically return to the starting groove of the record and replay the same record continuously.
4. For stopping the play, move the command control lever to "Stop". The tonearm will automatically return to the arm rest and the turntable stops revolving.

Note: When you have finished the repeated play, be sure to set the spindle in the turntable by turning 90 degrees clockwise, slightly pressing it downward. Otherwise, the equipment will not operate in any other mode.

MANUAL SINGLE PLAY

For manual single play, take the following steps.
1. Set the single play spindle in the turntable platter.
2. Unlock the arm lock by hand.
3. Set the command control lever to the ▼ position, and wait until the tonearm lifts off the arm rest.
4. Bring the tonearm horizontally over the cuing point of the record.
5. Set the command control lever to the ▼ position. Then, the tonearm will automatically set down on the record and start playing. When the record has finished playing, the tonearm will automatically return to the arm rest and the turntable will come to a stop.

* When interrupting the play for a time, move the command control lever to the ▼ position. The tonearm will raise and stop above the record while the turntable keeps revolving. For resuming the play, move the command control lever to the ▼ position. The tonearm will set down on the record surface and resume playing where it was interrupted.
* For stopping the play while the record is playing, move the command control lever to "Stop", and the tonearm will return to the arm rest and the turntable will stop revolving.

OPERATING COSIDERATIONS

- Do not hold the rotating turntable or the moving tonearm. Holding the revolving turntable or moving tonearm by hand will give a harmful effect to the intricate mechanism of your equipment. Change the spindle only while the turntable completely stops.
- Do not place or remove the record on or from the turntable while the turntable is revolving. Before taking such actions, be sure to set the command control lever to "STOP" and confirm that the turntable has stopped completely.
  * Take a notice that, when resuming the player after the interrupted play during an automatic multiple play (i.e. when bringing the command control lever to "Start" to resume the play), the unit will start playing from the starting point of the next record.

STYLUS REPLACEMENT

1. The stylus that comes with the unit is a diamond stylus, PIONEER PN-35. It should last about 400 to 600 hours of operation. Avoid to use it longer than this period. The stylus used beyond its normal service period will wear records and produce distortions in reproduced sounds. It is recommended that you purchase a replacement stylus PN-35 from a PIONEER agent in your area.
2. When replacing the stylus, pull and remove the cartridge holder from the tonearm as illustrated in Fig. 18. The cartridge is set in the cartridge holder. Pull out the stylus holder colored in yellow diagonally as illustrated in Fig. 19. For mounting the replacement stylus, push the stylus holder back in the cartridge.

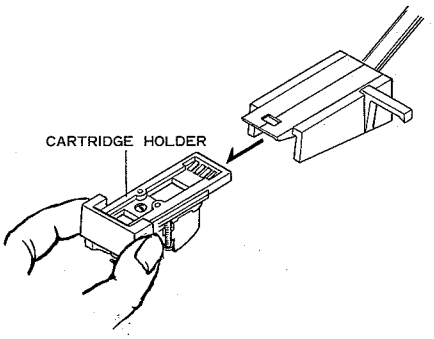


Fig. 18

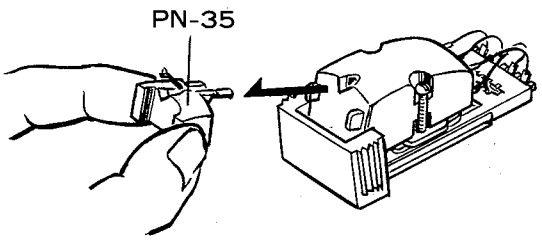


Fig. 19

PIONEER

SPECIFICATIONS

●CENTRAL CONTROL UNIT

SEMICONDUCTORS	
Tuner Section	
FET	1
Transistors	11
Diodes	17
Audio Section	
Transistors	20
Diodes, etc.	8

AUDIO SECTION	
Music Power Output	36 watts total (at 8Ω, IHF rating)
Harmonic Distortion	Less than 1% (at 1kHz)
Frequency Response	±1dB, 20Hz to 40kHz
Hum and Noise	MAG: 75dB AUX: 95dB
Input Sensitivity and Impedance	MAGNETIC PHONO: 2.4mV, 50kΩ (1kHz) TAPE MONITOR: 200mV, 100kΩ (1kHz) AUXILIARY: 200mV, 100kΩ (1kHz)
Output terminals and jacks	SPEAKER 4 to 16 ohms Stereo Headphones jack. Tape Recording jacks (TAPE REC). TAPE REC/P.B. Connector (DIN type)
Equalization Curves	PHONO: RIAA
BASS Control (each channel)	Boost 14dB, Cut 14dB (at 50Hz)
TREBLE Control (each channel)	Boost 9.5dB, Cut 10dB (at 10kHz)
Loudness Contour	Switchable to ON-OFF, Boost 12dB at 50Hz, Boost 5.5dB at 10kHz, with VOLUME control set at −40dB.

FM SECTION	
Circuit	Frontend using FET and 3-gang variable capacitor.
Frequency Range	87MHz to 108MHz
IHF Sensitivity	2.5μV
Image Rejection	55dB (at 98MHz)
Signal to Noise Ratio	50dB (IHF rating)
Antenna Input	300 ohms (balanced)

MULTIPLEX SECTION	
Circuit	Time-switching type de-modulator
Channel Separation	35dB (at 1kHz)

AM SECTION	
Circuit	Superheterodyne
Frequency Range	525kHz to 1605kHz
IHF Sensitivity	8μV
Image Rejection	47dB (at 1000kHz)
Antenna Input	Built in Ferrite Loopstick Antenna

LINE REQUIREMENT	110V to 120V 60Hz AC.
POWER CONSUMPTION	78VA (Receiver Section 65VA, Automatic Turntable 13VA)
DIMENSIONS	20 1/2"(W) x 20 1/2"(D) x 21 5/16"(H) (include the METAL PEDESTAL)
WEIGHT	60 lb. 8 oz. (include RECIEVER, AUTOMATIC TURNTABLE, and METAL PEDESTAL)

SPEAKER SYSTEMS	
ENCLOSURE	Walnut, oil finished, closed baffle type.
LOUDSPEAKERS	2-Way, 8" Woofer and 1/2 " Cone Tweeter.
DIMENSIONS	11"(W) x 9"(D) x 19"(H)
WEIGHT	15 lb. 7 oz. (for each)

● AUTOMATIC TURNTABLE

Automatic changer and Auto lead-in, auto-return, auto-cut, auto-repeat, with the multi-play spindle.
Manual record playing with single-play spindle.

MOTOR	4-pole induction
DRIVE System	Idler-drive
SPEED	33 1/3rpm, 45rpm and 78rpm. With 3% fine adjustment.
TURNTABLE PLATTER	10" Dia. 4 lb 3oz.
WOW and FLUTTER	Less than 0.1% (WRMS)
TONEARM	Dinamic balance (Pipe arm) With ANTI-SKATING CONTROL.
CARTRIDGE	Induced Magnet (Model PC-35) with 0.5mil diamond stylus.
STYLUS PRESSURE	2 to 3grams
REPLACEMENT STYLUS	PN-35
FREQUENCY RESPONSE	10Hz to 25000Hz
CHANNEL SEPARATION	More than 25dB (1kHz)
OUTPUT VOLTAGE	3.5mV (1kHz, 50mm/sec)
LINE REQUIREMENT	110V to 120V 60Hz AC.
POWER CONSUMPTION	13VA

Note: Specifications and the design may be subject to modification without notice.

PIONEER

CONDITIONS FREQUENTLY MISTAKEN TO TROUBLES

Noise: There are a variety of noises relating to the operation of a hi-fi unit. These are generally divided into two types; (1) the unit is faulty (a transistor or part is deteriorated) and (2) an external source of noise gives noise to the unit.
When a hi-fi unit produces an unpleasant noise, it is often judged that the unit is faulty, but statistical records indicate that the majority of noises produced in a hi-fi acoustic units result from external sources of noise. Due to the inherent high sensitivity and the high fidelity in reproduction, the unit amplifies and reproduces extraneous noises, however small, into definite output noise. If your receiver produces a noise, check according to the following table and trace out the source of noise for an appropriate corrective action.
The table includes the conditions that may be mistaken to troubles of the unit.

	Symptom	Suspected Source of Noise	Diagonosis and Remedy
When Listening to Broadcasts	Continuous or intermittent noise like jjjjjj or zzzzzz.	• Statics or listening. • Flourescent lamp, motor, or thermostat may be used in house or in the vicinity of the house.	In many cases, it is very difficult to remove the source of noise. In order to increase the radio input larger than the noise level, set up a good outdoor antenna and make a complete grounding.
	When a station is tuned in, hum is mixed in the program.	• Poor fluorescent lamp, motor, or electric heater may be used in house or near the house.	Reversing the line plug may occasionally alleviate this noise problem. Usually it is very difficult to eliminate the noise.
	Hissing sound noise in AM (medium wave) reception.	• The frequency of an adjacent station is interfering with that of the station being tuned in (10kHz beat interference). • TV set is on in the same house where the receiver.	Impossible to remove such interference. If the cause of such noise is in the TV set, increase the distance between the TV set and receiver.
	Static noise in FM reception (in particular, when automobiles run close to the house).	• White noises generated from automobile engines. • Radio frequency sewing machine or welding machine being used near your house.	In an area surrounded by hills or high buildings, the FM input signals are very weak. Thus the noise limiter in the circuit loses its function. Set up an outdoor FM antenna having many reflector elements.
When Playing Records	Reception of FM stereo program contains more noise than FM mono program.	• Note that the service area covered by an FM stereo broadcast is about 50 % that of a regular mono broadcast.	Increasing FM input signal may alleviate this problem. Use an exclusive FM outdoor antenna instead of the indoor T-antenna.
	Hum or buzz. When switched to radio reception, the noise will disappear.	• Poor connection of shielded wire (a). • Jack connection is loose. (b) • Line cord or fluorescent lamp is near the shielded wire.(c) • Poor grounding. (d) • HAM transmitting station or TV transmitting station is near your house. (e)	Correct the conditions stated in (a), (b), (c) or (d). In case of (e), report it to an official activity.
	Output tone quality is poor and mixed with noise. Treble is not clear.	• Stylus is worn out. (a) • Record is worn out. (b) • Dust adheres to stylus. (c) • Improper mounting of stylus. (d) • Stylus pressure is not proper. (e) • The TREBLE sound level is too high.	Check (a) through (e) and correct the condition. Lower the TREBLE level. Lower the TREBLE level.

Further, watch the following conditions: These are also apt to be mistaken to troubles of the unit.

	Symptom	Suspected Source of Noise	Diagonosis and Remedy
	Power is not turned on although the power switch is set to ON.	• Fuse is blown. (a) • Line plug is loose. (b)	Check (a) and (b) and correct the condition.
	In playing a record, increasing the volume will cause howling.	• Distance between the record player and the speakers is too short. • The place on which the record player or speakers is unstable.	Change the distance or rearrange the installation positions of the unit and speakers. (Installing the record player on a firm, solid stand may alleviate this problem.) Do not enhance the BASS sound level excessively.

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